# SYNTHESIS OF A NEW FUNCTIONALIZED MESOPOROUS SILICA FOR DETERMINATION OF ANTIMONY BY FLOW INJECTION SOLID PHASE EXTRACTON COUPLED WITH ON LINE HYDRIDE GENERATION ETAAS.

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A chelating resin, [1,5 bis(di-2-pyridyl) methylene thiocarbohydrazide] bonded to mesoporous silica (DPTH-ms), has been used as a novel solid phase extractant. This resin has some advantages compared to most of other chelating adsorbents. Therefore, the aim is to develop a reliable method for determination of the aforementioned element from natural water samples by the on-line column preconcentration/HG-ETAAS using the resin DPTH-ms.

With all experimental variables optimized, a linear calibration graph was obtained from 0.01 µg $l^{-1}$ to 2.5 µg $l^{-1}$of Sb(III) with a regression coefficient of 0.9952, Table 1.

Table 1. Analytical performance.

| Calibration equation[a] (n=6) | Blank signal/mV | Detection limit / µg $L^{-1}$ | Determination limit / µg $L^{-1}$ | Enrichment factor |
|---|---|---|---|---|
| Y=0.205x+0.049 | 0.044±0.018 | 0.002 | 0.065 | 5.00 |

[a] y, signal/mV; x, concentration/ µg $L^{-1}$

In order to test the accuracy and applicability of the proposed method for the analysis of real natural water samples and several certified reference materials of environmental waters, were analyzed. These samples were employed for the validation of the method. These results show good agreement with the certified values, according to the t-test for a confidence level of 95% and they show sufficiently high recoveries. Because these standard reference samples have included trace elements such as transition metals, it can be said that there is no interference from these metals at ng $ml^{-1}$ concentrations.